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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,118	06/07/2005	Yoshito Hashimoto	70404.62/ok	8790

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EXAMINER	
HON, SOW FUN	

ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
02/24/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/538,118	HASHIMOTO ET AL.	
	Examiner	Art Unit	
	SOPHIE HON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 5-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 5-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/21/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Request for Reconsideration

Repeated Rejections

1. The 35 U.S.C. 102(b) and 103(a) rejections over Menzer as the primary reference are repeated for the same reasons previously of record in the Office action dated 06/27/08.

Response to Arguments

2. Applicant's arguments have been fully considered but they are not persuasive.

3. Applicant argues that matching the refractive indices of the fibers and the resin does not necessarily lead to an in-plane retardation of substantially zero since even though the fibers and the set resin of Menzer may individually have matching refractive indices, refractive index anisotropy (i.e. in-plane retardation) is produced photoelastically due to thermal stress caused by differences in the thermal expansion coefficient between the fibers and the resin, where the magnitude of the stress depends on the photoelastic constants of the fibers and the resin, and on the thermal hysteresis, as well as the density of the fibers and the thickness of the composite substrate during the manufacturing process.

Applicant is respectfully apprised that Menzer teaches that in the finished composite substrate, the fibers and the resin have substantially the same refractive index (when set, column 2, lines 40-45) for the purpose of avoiding any optical interference for undistorted light transmission (column 2, lines 40-50) which means that

there is substantially zero optical retardation. The qualifier "substantially" is a legal term that implies a range of retardation values close to zero. Applicant is respectfully requested to cite relevant portions of Applicant's specification to pinpoint a specific range of retardation values that is considered by Applicant to be "substantially zero" in-plane retardation.

4. Applicant argues that since Menzer does not remotely teach or suggest that in-plane retardation of the finished composite substrate may be produced photoelastically due to thermal stress between the fibers and the resin, not recognizing that in-plane retardation of the finished composite substrate may be produced photoelastically due to thermal stress between the fibers and the resin, one of ordinary skill in the art would not have been motivated to modify the composite substrate of Menzer to have an in-plane retardation of substantially zero.

Applicant is respectfully reminded that only claim 5 requires the property of "negative uniaxial anisotropy". The recitation in parent claim 1 of a composite substrate that has an in-plane retardation of substantially zero does not preclude a composite substrate that is substantially optically isotropic. Menzer teaches that in the finished composite substrate, the fibers and the resin have substantially the same refractive index (when set, column 2, lines 40-45) for the purpose of avoiding any optical interference for an undistorted image display (undistorted light transmission, avoid interference with clear perception of the design, column 2, lines 40-50) which contains the species of an in-plane retardation of substantially zero. The term "substantially" has been discussed above.

The limitation in claim 5 of the property of "negative uniaxial anisotropy" is addressed by the secondary references of Speakman and Aizawa. Speakman is the secondary reference that teaches that a typical substrate for a liquid crystal device is one that comprises a composite substrate in which fibers are embedded in a resin matrix (fiber-reinforced epoxy resin sheet, column 45, lines 37-40). Aizawa is the secondary reference that teaches that an optical compensator having a negative uniaxial anisotropy (nx=ny>nz, column 5, lines 45-48) is used in the display device, for the purpose of providing the desired optical compensation for the positive optical anisotropy of the homeotropically aligned liquid crystal (column 2, lines 13-20), so as to widen the viewing angle of the display where an undistorted image is displayed (column 3, lines 10-15). Since the refractive indices in the orthogonal major axes of the optical plane are equal (nx=ny, column 5, lines 45-48), the in-plane retardation of the optical compensator is substantially zero (reduces the in-plane optical anisotropy to not higher than 1%, column 6, lines 55-60). Menzer (undistorted light transmission, avoid interference with clear perception of the design, column 2, lines 40-50) and Aizawa (compensating the positive anisotropy of the liquid crystal for widening the viewing angle, column 3, lines 10-15) are both directed towards an undistorted image display.

5. Applicant's arguments against the secondary references of Speakman, Aizawa, Emerson, Babb and Arakawa, are directed against Menzer, which are addressed above.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks, can be reached on (571)272-1401. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sophie Hon/
Examiner, Art Unit 1794

/KEITH D. HENDRICKS/

Supervisory Patent Examiner, Art Unit 1794